REMOVAL ASSESSMENT
QUALITY ASSURANCE SAMPLING PLAN

FOR

FRANK J. DOYLE SITE
(b) (6)
LEONARD, FANNIN COUNTY, TEXAS

Prepared for
U.S. Environmental Protection Agency Region 6
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1. INTRODUCTION

Weston Solutions, Inc. (WESTON®), the Superfund Technical Assessment and Response Team (START) contractor, has been tasked by the U.S. Environmental Protection Agency (EPA) Region 6 Emergency Management Branch (EMB) under Region 6 Contract No. EP-S5-17-02 as part of Technical Direction Document (TDD) No. 0001/17-004 (Appendix D) to conduct a removal assessment at the Frank J. Doyle (Site) The Site operations included recycling transformers by draining the oil and by separating the recoverable metals. The current address for the site is at 905 Poplar Street (historic address was (b) (6) which encompasses the owners residential properties and the site) in Leonard, Fannin County, Texas, and a Site Location Map is provided as Figure 1-1. All figures are provided as separate portable document format (PDF) files. The Superfund Enterprise Management System (SEMS) Identification Number assigned to the Site is TXD980865109. The Site coordinates are Latitude 33.389530° North and Longitude -96.243160° West. START has prepared this Quality Assurance Sampling Plan (QASP) to describe the technical scope of work and activities tasked for completion as part of TDD No. 0001/17-004.

1.1 PROJECT OBJECTIVE

START is providing technical assistance to EPA Region 6 for the performance of a Removal Assessment and to collect data necessary to support a determination by EPA that the Frank J. Doyle Site presents a threat to public health and/or welfare of the United States or the environment in accordance with *40 Code of Federal Regulations (CFR) 300.415.*

The primary objective of the removal assessment is to determine the nature and extent of potential site-related contaminants of concern (COCs), including polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and metals in both the surface and subsurface soils at the Frank J. Doyle Site and off-site vicinity based upon earlier sampling investigations completed in the 1990s. To achieve the objective, samples will be collected from on- and off-site locations identified through use of a grid system that overlays the area. The analytical results of this removal assessment will be evaluated along with historical results from previous sampling investigations to determine the presence of site-related COCs. Soil results will be compared to the minimum EPA Residential Soil Carcinogenic and Non-carcinogenic (THQ=1.0 and THQ=0.1) 2017

Regional Screening Levels (RSLs) (Appendix C) of pre-selected analytes. The analytes include PCBs, SVOCs/polycyclic aromatic hydrocarbons (PAHs), and Target Analyte List (TAL) metals, including mercury.

1.2 PROJECT TEAM

The Project Team will consist of Jeff Criner, the START Deputy Program Manager/Scope of Work (SOW) Leader; Sean Gavlas, the Project Team Leader (PTL) and Field Team Leader (FTL); a Field Safety Officer (FSO); a Data Manager (DM); and additional START personnel as necessary. The PTL will be responsible for the technical quality of work performed in the field, for documentation of site operations, and will serve as the START liaison to the EPA Region 6 On-scene Coordinator (OSC) Gary Moore. The PTL, in collaboration with EPA OSC Moore, will determine the location for sample collection in the field, collect samples as necessary, log the activities at each sample location in the field logbook, and verify the sample documentation. The PTL will oversee the packaging and shipping of samples to the EPA-approved laboratory. The FSO will be responsible for providing overall site health and safety support. Data management will include entering samples collected into EPA Scribe Environmental Sampling Data Management System (SCRIBE); producing accurate chain-of-custody documentation for the samples during the removal action; entering daily operations and sample collection data into the Regional Response Center–Enterprise Data Management System (RRC-EDMS) Response Manager software; and shipping samples. START will conduct sample collection, preparation, and documentation and will document site activities in field logbooks and data sheets. The START SOW Leader, Jeff Criner, will provide technical support to START during project activities.

1.3 QASP FORMAT

This QASP has been organized in a format that is intended to facilitate and effectively meet the objective of the removal assessment. The QASP is organized as follows:

- Section 1 – Introduction
- Section 2 – Site Background
- Section 3 – Sampling Approach and Procedures
- Section 4 – Analytical Methods and Data Validation
- Section 5 – Quality Assurance

Tables are included at the end of each respective section. All figures are provided as separate Portable Document Format (PDF) files. Appendices are attached with the following information.

- Appendix A Site-Specific Data Quality Objective
- Appendix B Standard Operating Procedures
- Appendix C 2017 EPA Residential Soil Regional Screening Levels – THQ=1.0 and 0.1
- Appendix D TDD No. 0001/17-004

2. SITE BACKGROUND

This section presents a summary of background information for the Frank J. Doyle Site including site location and description, operational and regulatory history, previous investigations, and sources of contamination.

2.1 SITE LOCATION AND DESCRIPTION

The Frank J. Doyle site is a former transformer salvage yard (formerly called FJ Doyle Salvage Transformers) of approximately 0.6 acre in size, located at 905 North Poplar Street in Leonard, Fannin County, Texas (listed on the TDD as (b) (6) The geographic coordinates of the site are Latitude 33.389530° North and Longitude -96.243160° West. A Site Area Map is provided as Figure 2-1.

The site is located within a residential neighborhood, and bounded to the east by North Poplar Street, to the north by Cottonwood Street, and to the south and west by residential properties. There is one shop building with concrete slab. Historically, the property had a 6-foot wooden perimeter fence surrounding the property but it no longer exists. The yard of the site consists of a concrete drive and gravel ground cover as well as a concrete containment structure. A Site Layout Map is provided as Figure 2-2.

Leonard High School and Leonard Intermediate School are located adjacent to the east portion of the Site across from North Poplar Street. An alleyway on the southern boundary of the Site tracks east to west from North Poplar Street to North Cedar Street. The properties located adjacent to the southern portion of the Site include residences and a day-care facility. Residences are also located to the north and west of the site. Additionally, the Leonard Elementary School lies due south of the site on the south side of East Hackberry Street.

The Doyle site lies approximately 700 feet above sea level with an apparent gentle slope to the south. The site within Fannin County lies in the northern fringe of the Texas Blackland Prairie, which extends through North Central Texas and is characterized by broad flood plains and shallow stream valleys. Information obtained from the U.S. Department of Agriculture (USDA) indicated

that the soils generally consist of shallow, well-drained, moderately permeable, loamy soils that are formed in chalk or in chalk interbedded with marl.

2.2 OPERATIONAL AND REGULATORY HISTORY

The site, known as the Frank J. Doyle Site (also known as FJ Doyle Site, FJ Doyle Salvage), operated under the ownership of Mr. Frank J. Doyle from 1974 until January 1997 when (b) (6) (b) (6) took over the operation. During its operation in the 1990s, the site employed a few workers, but not more than five. Frank Doyle received transformers from companies in Texas, Oklahoma, Louisiana, and Arkansas. Site operations included recovering oil, wiring, and scrap metal from the transformers. Based on historical record, the north central portion of the site was utilized to off-load out of service transformers from suppliers and for temporary storage. The southeastern portion of the site was used for long-term storage of transformers, and the southwestern portion of the site was used for storage of numerous containers of drums and tanks containing transformer oil. Various storage containers were utilized on-site to store drained liquids from the transformers including one 375-gallon container, two 500-gallon containers, and numerous 55-gallon drums. After the transformer cores had been drained of their remaining liquids, they were placed in an oven to bake off remaining oil, paper, and varnish. The baked cores were then stripped for recoverable metals, which were primarily copper and aluminum. Occasionally, transformer oil was transferred from the storage tanks to trucks and shipped off-site to a disposal facility by an authorized waste oil transporter. It was reported that Mr. Frank Doyle used the oil in the past for weed control and distributed the oil to various individuals for use as a weed killer in the 1970s.

The past use of PCBs in electrical equipment such as transformers and capacitors was common until 1979 when PCBs were banned in the United States and became regulated under *40 Code of Federal Regulations 761*.

2.3 SUMMARY OF PREVIOUS INVESTIGATIONS

Over the past two decades, numerous investigations were performed at the Site. Ecology & Environment, Inc. (E&E) conducted an initial site assessment at Site from September to October 1991 in response to a citizen's complaint concerning the improper handling and salvage of

transformers. Samples collected from areas both north and south of the salvage shop, where transformers were stored, contained detections of PCB Aroclor-1260 above 50 part per million (ppm). E&E performed additional off-site sampling in April 1991 that confirmed high detections of Aroclor-1260 along a drainage pathway south of the site that were approximately 270 ppm. Due to further residential concerns, the EPA Technical Assistance Team (TAT) collected 94 soil samples at the site in 1995. PCB Aroclor-1260 concentrations were detected adjacent to the south gate at a concentration of 2,730 ppm (approximately located in property FJ04 grid 7 and 8). PCBs were also detected in the east side transformer storage area, the southwest container storage area, the northern transformer off-load area, and areas in the alleyway south of the site. In May 1997, EPA conducted a Preliminary Assessment investigation and noted the presence of yellow-green stains where transformer oil was stored and transferred for shipment. In September 1998, a Screening Site Inspection (SSI) was conducted by the Texas Natural Resource Conservation Commission (now the Texas Commission on Environmental Quality) on behalf of EPA. The maximum concentration PCB Aroclor-1260 concentration was 4,100 ppm (approximately located in the alley [grid EAS08]). During the SSI, approximately 20 soil samples and 3 drinking water well samples were collected. The SSI concluded that the presence of contaminants likely originated from on-site sources. Results of the analyses available for review indicated that some of the samples contained concentrations of PCBs, SVOCs/PAHs and Resource Conservation and Recovery Act (RCRA) metals above state and/or EPA guidelines.

2.4 POTENTIAL SOURCES OF HAZARDOUS MATERIALS

Information concerning the known or potential hazardous substance source areas at the Site and the COCs thought to be associated with each source is presented in the following section. Former Site activities that contributed to potential sources include the following:

- Storage and improper recycling of electrical transformers.
- Storage and transfer of transformer oil into tanks and drums.

2.5 SITE CONCERNS

Site concerns regarding public health and the environment were determined based on the following site conditions.

- Based on previous on-site and off-site investigations, surface and subsurface soils were determined to be contain concentrations of PCBs, SVOCs/PAHs, and metals that exceeded residential EPA Region 6 RSLs.
- Chance exposure to COCs by ingestion, skin absorption, and inhalation was determined to be a site concern.

The COCs for the site are, but not limited to, PCBs, SVOCs/PAHs, and metals associated with transformer salvage yards.

3. SAMPLING APPROACH AND PROCEDURES

The specific field investigation activities that will be conducted during the Frank J. Doyle assessment are described in the following subsections. Specifically, sampling procedures, locations, quality assurance (QA), and the analytical approach that will be used during the removal assessment are discussed. Relevant Standard Operating Procedures (SOPs) for field sampling methods are included as Appendix B to this QASP. START will use EPA SCRIBE software to manage sample data.

3.1 OVERVIEW OF SAMPLING ACTIVITIES

START and the EPA OSC developed a sampling strategy intended to collect data necessary to evaluate and meet the objective of the removal assessment. START will collect up to approximately 360 composite soil samples (including quality assurance/quality control samples) from 50- by 50-foot grids established throughout the site. The locations of the 98 proposed sampling grids are illustrated on Figure 3-1. Samples will be collected from grids established on-site (FJD04), within residential properties (FJD01, FJD02, FJD03, FJD05, FJD06, FJD07, FJD08, and FJD09), easements (EAS01-EAS08) south of the site, right-of-ways east of the site (ROW01-ROW04), and drainages areas that may have been impacted by site activities (DRA01-DRA22). Additional impromptu samples may be taken along fencelines and building slabs to determine if PCB oils may have been used as weed control along those areas. A Data Quality Objective (DQO), as well as an overview of the health and safety and field activities required to complete removal assessment activities, are presented in the following subsections.

3.1.1 Data Quality Objective

The objective of soil sampling is to further define the nature and extent of site-related contaminants concern (COCs) in surface and subsurface soils at off-site residential properties south and west of the Frank J. Doyle site as well as nearby easements, right-of-ways and drainage areas. To accomplish this, a DQO for determining the extent of site-related contaminated soil has been established and is included as Appendix A. The DQO presented was developed using the seven-step process set out in the *EPA Guidance on Systematic Planning Using the Data Quality*

Objectives Process: EPA QA/G-4.. Soil sample locations were selected systematically to further delineate the potential for contaminant hotspots.

3.1.2 Health and Safety Implementation

The removal assessment field activities will be conducted in accordance with a site-specific Health and Safety Plan (HASP). The FSO will be responsible for implementation of the HASP during field investigation activities. The field team will be required to conduct work according to the guidelines and requirements of the HASP. In accordance with the general health and safety operating procedures, the field team will also drive the route to the hospital specified in the HASP prior to initiating sampling activities.

3.1.3 Community Relations

Community relations may require additional EPA involvement due to the general nature of the site. Community relations issues will be directed to the EPA OSC. If the EPA OSC is not present, the START PTL, under the guidance of the SOW Leader, will manage community relations in the field as directed by the EPA OSC. If a community relations plan and an implementation program become necessary, START will establish each if requested by the EPA OSC.

3.1.4 Field Activities Review Meeting

The PTL will conduct a meeting with the entire field team to familiarize them with the project scope of work, discuss the planned field activities and roles and responsibilities, and review the project HASP and other relevant SOPs. This meeting will be conducted prior to any site activities.

3.1.5 Mobilization and Command Post Establishment

START will mobilize equipment, including the mobile command trailer, required for the removal assessment from the WESTON Regional Equipment Store warehouse located in Houston, Texas, as necessary.

3.2 SAMPLING/MONITORING APPROACH

Sampling will be conducted in general accordance with the *EPA Compendium of Emergency Response Team (ERT) Soil Sampling and Surface Geophysics Procedures* and with EPA ERT and START SOPs (Appendix B). WESTON SOPs include SOP No. 0110.01 and 1001.10 (Surface Soil Sampling and Composite Sampling). The specific site preparation, sampling, decontamination, and sample handling procedures, including disposition of investigation-derived waste (IDW), are described in the following subsections. The following subsections also include the proposed sampling, sample handling procedures, and field quality control (QC) samples for the removal assessment activities. The EPA OSC will be notified and concurrence will be obtained if significant deviations from the planned sampling activities are proposed. Details regarding deviations from the QASP will be documented in the START site logbook.

3.2.1 Site Reconnaissance and Soil Sampling

The EPA OSC and START developed a sampling strategy consisting of sample grids of various sizes (not exceeding an area of 50 feet by 50 feet) to be located south of the Frank J. Doyle site (Figure 3-1). START will collect approximately 360 soil samples (including QA/QC samples) from 98 sample grids. The grids are established along residential drainages, city easements and right-of-ways, and within residential properties.

At each designated grid, START will utilize Geoprobe® subsurface coring devices, trowels, hand augers, or slam bars to collect surface and subsurface soil samples. Principal care will be taken to ensure the identification of utilities prior to subsurface sampling. Prior to conducting subsurface soil sampling, the GeoProbe operator will contact One-Call and START will also subcontract a private utility locate in order to properly identify and flag potential utility lines, including electric, gas, telephone, water, and sewer lines. Sample that will be collected from grids along drainages, easements, or right-of-ways, will have the highest concentration of utility lines. Each sample will consist of a five-point composite sample collected at three depth intervals: 0 to 1 inches below ground surface (bgs), 1 to 6 inches bgs, and 6 to 12 inches bgs. In addition to the aforementioned sampling depths, samples will be collected from a depth greater than 12 inches in grids determined by the OSC. Grids FJD03-02, FJD03-04, FJD03-06, FJD03-08, FJD06-01, FJD07-01, EAS06,

DRA07, DRA08, DRA09, DRA10 will also have samples collected from 12 to 24 inches bgs. All grids within FJD04, EAS07, EAS08 will have samples collected from 12 to 24 inches and 24 to 36 inches bgs. Samples will be composited per interval from the five aliquots within each grid. For example, the 1-to 6-inch depth soils from each of the five sample aliquots will be placed in 1-gallon plastic bags, thoroughly composited and then placed in the appropriate sample container. During sampling and sampling processing, each team will use a Personal Data Ram (PDR) 1000 in order to monitor the degree of airborne particles in work areas. Samples will be collected in appropriate sample containers and submitted to an EPA-approved laboratory for analysis. The laboratory required sample containers, preservation techniques, sample volumes, and holding times are presented in Table 3-1.

3.2.2 Field Quality Control Samples

START will collect field duplicates, MS/MSD samples, and prepare equipment rinsate blank samples as needed during the removal assessment (SOP 1005.01, 1005.02). QA/QC samples will be collected according to the following:

- Blind field duplicate samples will be collected during sample activities for locations selected by the PTL. The data obtained from these samples will be used to ensure the quality assurance of the sampling procedures and laboratory analytical data by following an evaluation of reproducibility of results. Efforts will be made to collect duplicate samples from an area co-located from the original sample location where there is visual evidence of contamination or where contamination is suspected. One duplicate sample will be collected for every 10 samples of the same matrix.

- Matrix Spike (MS)/Matrix Spike Duplicate (MSD) samples will be collected during the sample activities for locations selected by the PTL. The data obtained from these samples will be used to ensure the QA of the sampling procedures and laboratory analytical data by following an evaluation of reproducibility of results. Efforts will be made to collect MS/MSD samples from an area co-located from the original sample location where there is visual evidence of contamination or where contamination is suspected. One MS and one MSD sample will be collected for every 20 samples of the same matrix.

- Equipment rinsate blanks will be prepared by pouring laboratory-grade de-ionized water over non-disposable sampling equipment after it has been decontaminated and by collecting the rinse water in sample containers for analyses. These samples will be prepared to demonstrate that the equipment decontamination procedures for the sampling equipment were performed effectively. The equipment rinsate blanks will be prepared at the end of each day that non-disposable sampling equipment is used.

- Temperature Blanks will be prepared in the field and will consist of one 40-milliliter glass sample container with a Teflon-lined septum cap. The temperature blank will be packaged along with the field samples in the shipping cooler and will represent the temperature of the incoming cooler upon receipt at the laboratory. Use of these samples within a shipping container enables the laboratory to assess the temperature of the shipment without disturbing any of the field samples.

3.2.3 Investigation-Derived Wastes

Disposal of Investigation-derived Wastes (IDW) such as personal protective equipment (PPE), will be the responsibility of the sampling team. Excess soil generated by GeoProbe® sampling activities will be returned to the location where it was collected from the ground. The IDW will be managed according to EPA's Management of Investigation-Derived Wastes during Site Inspections (EPA/540/G-9/009) and other applicable state requirements and regulations. Following completion of sampling activities, disposable sampling equipment, which includes acetate GeoProbe® sleeves and PPE, will be double bagged and disposed. It is anticipated that minimal amounts of IDW will be generated during this activity.

3.2.4 Sample Handling Procedures

Samples will be collected using equipment and procedures appropriate to the matrix, parameters, and sampling objectives. The volume of the sample collected must be sufficient to perform the analysis requested. Samples must be stored in the proper types of containers and preserved in a manner for the analysis to be performed (SOP 1001.01, 1001.10).

Clean, decontaminated sampling equipment and sample containers will be maintained in a clean, segregated area. Samples will be collected with clean decontaminated equipment (SOP 1201.01). Each sample collected for laboratory analysis will be placed directly into pre-cleaned, unused containers. Sampling personnel will change gloves between each sample collection/handling. Samples will be assembled and catalogued prior to shipping (SOPs 1101.01 and 1102.01) to the designated laboratory.

3.3 SAMPLE MANAGEMENT

Specific nomenclature that will be used by START will provide a consistent means of facilitating the sampling and overall data management for the project (SOP 0110.05). The START Scope of Work Leader must approve any deviations from the sample nomenclature proposed below.

As stated in SOP 0110.05, sample nomenclature will follow a general format regardless of the type or location of the sample collected. The general nomenclature consists of the following components:

- Property/Site Identification (ID) or Area of Concern
- Grid ID
- Sample Collection Depth
- Collection Type (Soil, Field QC, etc.)
- QA/QC Type (Normal, Duplícate, etc.)

The following presents the sample nomenclature for analytical samples that will generate unique sample names compatible with most data management systems. The sample nomenclature is based upon specific requirements for reporting these results.

SAMPLE NOMENCLATURE - SOIL

Property ID - Grid ID – Date - Depth - Collection Type + QC Type

Where:

Property ID: An identifier used to designate the particular property or Area of Concern (AOC) where the sample was collected.

Grid ID: A two- or three-character alphanumeric code used to designate the particular grid or station within the AOC where the sample was collected.

Date: An identifier used to designate the year and month when the sample was collected.

Depth: A two-digit code used to designate what depth of sample was collected:

01	0 to 1 inches
06	1 to 6 inches
12	6 to 12 inches
24	12 to 24 inches
36	24 to 36 inches

Collection Type: A one-digit code used to designate what type of sample was collected:

1	Surface Water	6	Oil
2	Groundwater	7	Waste
3	Leachate	8	Other
4	Field QC/Water Sample	9	Drinking Water
5	Soil	0	Sediment

QC Type: A one-digit code used to designate the QC type of the sample:

1	Normal	6	Confirmation
2	Duplicate	7	Confirmation Duplicate
3	Rinsate Blank		
4	Trip Blank		
5	Field Blank		

Examples:

- ***FJD04-04-20180430-06-51***: Represents a normal soil sample collected from Grid 4 within property FJD04 on April 30, 2018 at a depth of 6 inches bgs.
- ***FJD06-06-20180505-12-52***: Represents the duplicate soil sample collected from Grid 6 within property FJD06 on May 5, 2018 at a depth of 12 inches bgs.

Sample data management will be completed utilizing SCRIBE including chain-of-custody and sample documentation needs.

3.4 DECONTAMINATION

The non-disposable sampling equipment, if any, (hand trowels, stainless steel bowls, Geoprobe® coring shoe, etc.) used during the sample collection process will be thoroughly pre-cleaned before initial use, between use, and at the end of the field investigation. Equipment decontamination, as described in SOP 1201.01, will be completed in the following steps:

- Water spray or brush, if needed, to remove soil/sediment from the equipment.
- Nonphosphate detergent and potable water wash to clean the equipment.
- Final potable water rinse.
- Equipment air-dried.

Personnel decontamination procedures will be described in the site-specific HASP that will be prepared by START prior to implementation of activities at the site. Decontamination activities will be conducted at a temporary decontamination pad that will be constructed/designated in an area to be determined by the PTL. Any excess soil and/or fluids generated as a result of equipment

decontamination will be placed in a drum and staged in an area to be determined by the OSC. The drum will be labelled on the side with the name of the site, the contents, sampling location, and date.

3.5 SAMPLE PRESERVATION, CONTAINERS, AND HOLD TIMES

Sample preservation, containers, and holding times utilized during this removal assessment will be consistent with analytical methods and laboratory volume requirements as provided in Table 3-1. Once collected and placed in an 8-ounce glass jar, samples will be stored in coolers and kept at approximately 4 C while at the site and until they are submitted for analysis. Chain-of-custody forms will be completed for each sample shipment and sent with the samples to the designated laboratory (GCAL) via United Parcel Service (UPS) carrier. Samples that have been analyzed will be disposed of by the designated laboratory in accordance with the laboratory SOPs.

Table 3-1
Revised Requirements for Containers, Preservation Techniques, Sample Volumes, and Holding Times
Frank J. Doyle
Leonard, Fannin County, Texas

Name	Analytical Methods	Matrix	Container	Preservation	Minimum Volume or Weight	Maximum Holding Time
TAL Metals and Mercury	SW846 6020/6010B/7471A	Soil	1 x 8-oz glass jar[1]	4°C	5 grams	28 days for mercury, 180 days all other metals
PCBs	SW846 8082A	Soil	1 x 8-oz glass jar[1]	4°C	30 grams	N/A
SVOCs/TCL + PAH	SW846 8270-SIM (or 8270 Low-Level)	Soil	1 x 8-oz glass jar[1]	4°C	30 grams	14 days to extraction (soil)/ 40 days after extraction to analysis

Notes: [1]jar – The laboratory will perform all three analyses for each sample from one 8-oz glass jar.

4. ANALYTICAL METHODS AND DATA VALIDATION

Soil samples will be submitted to a laboratory for analytical analysis. Requested sample analysis will be indicated on the chain-of-custody and will include the following methods on all samples submitted (see Table 3-1):

- TAL Metals plus Mercury by EPA SW846 Method 6020/7471A
- PCBs by EPA SW846 Method 8082A
- SVOCs/PAHs by EPA SW846 Method 8270-SIM (or 8270 Low-Level)

The laboratory and shipping information are as follows:

GCAL Analytical Laboratories
7979 Innovation Park Drive
Baton Rouge, LA 70820
(225)769-4900

Table 4-1 below illustrates the sample description and rationale.

Table 4-1
Sample Description and Rationale
Frank J. Doyle
Leonard, Fannin County, Texas

Sample Location	Sample Collection Method	Sample Depth	No. of Samples	Rationale	EPA Analytical Method
Soil	Disposable Scoop Hand Trowel and/or Geoprobe®	Down to 36 inches bgs	Approximately 360 soil samples[1]	To document the presence of site-specific contaminants of concern in subsurface soil	TAL Metals plus Mercury – EPA SW846 Method 6020/6010B/7471A PCBs – EPA SW846 Method 8082A SVOCs/PAHs – EPA SW846 Method 8270-SIM (or 8270 Low-Level)
Water[2]	Grab	N/A	One for each day non-disposable sampling equipment was used	To demonstrate that equipment decontamination procedures for the sampling equipment were performed effectively	TAL Metals plus Mercury – EPA SW846 Method 6020/6010B/7471A PCBs – EPA SW846 Method 8082A SVOCs/PAHs – EPA SW846 Method 8270-SIM (or 8270 Low-Level)

Notes: [1]Soil Samples – Approximately 327 Normal and 33 QA/QC samples including field duplicates and MS/MSD samples.
Water[2] – Equipment rinsate samples will be collected off the shoe of the GeoProbe.

Following analysis, the laboratory will provide preliminary deliverables data via email in PDF. The final data deliverable will include a full Contract Laboratory Program (CLP)-like data package (Level IV data package with QC and raw data) in PDF and a final Electronic Data Deliverable (EDD) in Microsoft Excel format. Initial data deliverables (preliminary results) will be based on a standard, 10-business-day Turn-around Time (TAT) starting when the laboratory receives the samples, unless otherwise directed by the EPA OSC. The TAT criteria will be initiated when the sample group is received by the laboratory and continues until the data deliverable is submitted to START. The final Level IV data deliverable will be submitted by the laboratory based on a 10-business-day TAT.

START will validate the analytical data generated by the laboratory and provide an evaluation of QA/QC samples for reporting purposes. Data validation will be conducted in accordance with the EPA CLP *National Functional Guidelines for Organic Superfund Data Review (January 2017),* and the EPA CLP *National Functional Guidelines for Inorganic Superfund Data Review (January 2017)*. A summary of the data validation findings will be presented in Data Validation Summary Reports as part of the final report. The following will be evaluated to verify that the analytical data is within acceptable QA/QC tolerances:

- The completeness of the laboratory reports, verifying that required components of the report are present and that the samples indicated on the accompanying chain-of-custody are addressed in the report.
- The calibration and tuning records for the laboratory instruments used for the sample analyses.
- The results of internal standards analyses.
- The results of laboratory blank analyses.
- The results of laboratory control sample (LCS) analyses.
- The results of MS/MSD analyses.
- The results of surrogate recovery analyses.
- Compound identification and quantification accuracy.
- Laboratory precision, by reviewing the results for blind field duplicates.
- Variances from the QA/QC objectives will be addressed as part of the Data Validation Summary Reports.

5. QUALITY ASSURANCE

Quality assurance will be conducted in accordance with the WESTON Corporate Quality Management Manual and the WESTON Programmatic Quality Assurance Project Plan (QAPP). Following receipt of the TDD from EPA, a Quality Control officer will be assigned and will monitor work conducted throughout the entire project including reviewing interim report deliverables and field audits. The START PTL will be responsible for QA/QC for the field investigation activities. The designated laboratory utilized during the investigation will be responsible for QA/QC related to the analytical work. START personnel will also collect samples to verify that laboratory QA/QC is consistent with the required standards and to validate the laboratory data received.

5.1 SAMPLE CUSTODY PROCEDURES

Because of the evidentiary nature of sample collection, the possession of samples must be traceable from the time the samples are collected until they are introduced as evidence in legal proceedings. After sample collection and identification, samples will be maintained under COC procedures. If the sample collected is to be split (laboratory QC), the sample will be allocated into similar sample containers. Sample labels completed with the same information as that on the original sample container will be attached to each of the split samples. Personnel required to package and ship coolers containing potentially hazardous material will be trained accordingly.

START personnel will prepare and complete COC forms using the SCRIBE environmental sampling data management system for all samples sent to a START-designated off-site laboratory. The COC procedures are documented and will be made available to personnel involved with the sampling. A typical COC record will be completed each time a sample or group of samples is prepared for shipment to the laboratory. The record will repeat the information on each sample label and will serve as documentation of handling during shipment. A copy of this record will remain with the shipped samples at all times, and another copy will be retained by the member of the sampling team who originally relinquished the samples. During the project and at its completion, the Data Manager will publish the SCRIBE file to SCRIBE.net to establish a permanent record of the samples collected and the data resulting in the analysis of those samples.

Samples relinquished to the participating laboratories will be subject to the following procedures for transfer of custody and shipment:

- Samples will be accompanied by the COC record. When transferring possession of samples, the individuals relinquishing and receiving the samples will sign, date, and note the time of the sample transfer on the record. The custody record documents the transfer of sample custody from the sampler to another person or to the laboratory.

- Samples will be properly packed for shipment and dispatched to the appropriate laboratory for analysis with separate, signed custody records enclosed in each sample box or cooler. Sample shipping containers will be custody-sealed for shipment to the laboratory. The preferred procedure includes use of a custody seal wrapped across filament tape that is wrapped around the package at least twice. The custody seal will then be sealed to ensure that the only access to the package is by cutting the filament tape or breaking the seal to unwrap the tape.

- If sent by common carrier, a bill of lading or air bill will be used. Bill of lading and air-bill receipts will be retained in the project file as part of the permanent documentation of sample shipping and transfer.

SOPs 1101.01 and 1102.01 describe these procedures in more detail.

5.2 PROJECT DOCUMENTATION

Documents will be completed legibly in ink as well as by entry into field logbooks, Response Manager, or SCRIBE. Response Manager is the Enterprise Data Collection System designed to provide near real-time access to data normally collected in logbooks. Response Manager provides a standard data collection interface for modules of data normally collected by START field personnel while on-site. These modules fall into two basic categories for response and removal. The modules include Emergency Response, Reconnaissance, Facility Assessment, Shipping, Container, Materials, Calls, Household Hazardous Waste (HHW), and General/Site-Specific Data. The system provides users with a standard template for laptop/desktop/tablet PCs that will synchronize to the secure web interface using merge replication technology to provide access to collected data via the RRC-EDMS EPA Web Hub. Response Manager also includes an integrated Global Positioning System (GPS) unit with the secure PDA application, and the coordinates collected in Response Manager are automatically mapped on the RRC-EDMS interactive mapping site. GIS personnel can access this data to provide comprehensive site maps for decision-making support.

Response Manager also includes an analytical module that is designed to give SCRIBE users the ability to synchronize the SCRIBE field data to the RRC-EDMS Web Hub. This allows analytical data managers and data validators access to data to perform reviews from anywhere with an available Internet connection. The analytical module is designed to take the analytical data management functionality of the EPA SCRIBE software and make it available for multiple users to access on one site. Response Manager also supports EPA standards such as SEDD and will allow users to connect to the database using the SCRIBE desktop interface, thus providing normal SCRIBE desktop-like functionality for multiple users.

5.3 FIELD DOCUMENTATION

The following field documentation will be maintained as described below.

Field Logbook

The field logbook is a descriptive notebook detailing site activities and observations so that an accurate, factual account of field procedures may be reconstructed. Each individual will sign any entry he/she makes. Entries will include, at a minimum, the following:

- Site name and project number.
- Names of on-site personnel.
- Dates and times of all entries.
- Description of all site activities, including site entry and exit times.
- Noteworthy events and discussions.
- Weather conditions.
- Site observations.
- Identification and description of samples and locations.
- Subcontractor information and names of on-site personnel.
- Dates and times of sample collections and chain-of-custody information.
- Records of photographs.
- Site sketches.
- Calibration results.
- Sample Labels.

Sample labels will be securely affixed to the sample container. The labels will clearly identify the particular sample and will include the following information:

- Site name and project number.
- Date and time the sample was collected.
- Sample preservation method.
- Analysis requested.
- Sampling location.
- Chain-of-Custody Record

A chain-of-custody will be maintained from the time of sample collection until final deposition. Every transfer of custody will be noted and signed for and a copy of each record will be kept by the signing individual. The chain-of-custody is discussed in Subsection 5.1 Sample Custody Procedures.

Custody Seal

Custody seals demonstrate that a sample container has not been tampered with or opened. The individual who has custody of the samples will sign and date the seal and affix it to the container in such a manner that it cannot be opened without breaking the seal.

Photographic Documentation

START personnel will take photographs to document site conditions and activities as work progresses. Initial conditions should be well documented by photographing features that define the site-related contamination or special working conditions. Representative photographs should be taken of each type of site activity. The photographs should show typical operations and operating conditions as well as special situations and conditions that may arise during site activities. Site final conditions should also be documented as a record of how the site appeared at completion of the work.

Photographs should be taken with either a film camera or digital camera capable of recording the date on the image. Each photograph will be recorded in the logbook and within Response Manager with the location of the photographer, direction the photograph was taken, the subject of the photograph, and its significance (i.e., why the picture was taken). Where appropriate, the

photograph location, direction, and subject will also be shown on a site sketch and recorded within Response Manager.

5.4 RESPONSE MANAGER

START will use the Response Manager module located on the EPA Web Hub, https://solutions.westonproject.net/epawebhub/, to collect and organize the data collected from project activities. The information to be included encompasses some or all of the following depending on the specific project needs:

- General Module – Site-specific data including location and type of site. It also includes an area for all key site locations including geo-spatial data associated with the key site locations.
- Emergency Response Module – includes the following sub-modules: Basic Info, HAZMAT, Release, Timeline Log, Incident Zones, Photos, Sensitive Receptors, Evacuations, Source, Cause, and Weather.
- Reconnaissance Module – provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for targeted reconnaissance efforts. Typically the data in this module is associated with ESF-10 deployments and the cleanup of orphaned containers and hazardous debris, but the module can be utilized for any and all reconnaissance activities.
- Facility Assessment Module - provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for assessments of structures. Typically utilized for EPA-regulated program facilities during an ESF-10 deployment of resources. This module can be utilized to track the assessment of any facilities including multiple assessments of the fixed facilities.
- Shipping Module – provides standard templates for creating a cradle-to-grave record of all waste shipments from the site until they are recycled or destroyed. This includes the ability to capture manifest and manifest line items, and upload photos/original documents to support the records.
- Container Module – provides standard templates for cataloging containers including HAZCAT and Layer information in each container. The module also allows for tracking which containers are bulked.
- Properties Module – provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for collection of property data including access agreements and assessments of the property and current status of property with regard to the site removal action.
- Materials Module – provides standard templates for tracking materials that are brought on-site or that are removed from the site.

- Daily Reports – provides standard templates for tracking daily site activities, daily site personnel, and daily site notes for reporting back to the OSC in a POLREP or SITREP.
- HHW Module - provides standard templates with the flexibility of adding any additional questions of values to the drop-down lists for tracking the amount of HHW collected at individual collection stations by HHW type.
- Data Files – data files can be uploaded in the photo module section and be associated with individual records or with the site in general. The metadata associated with that data file can be filled in using the photo log fields.

The data stored in the Response Manager database can be viewed and edited by any individual with access rights to those functions. At any time deemed necessary, POLREP and/or SITREPs can be generated by exporting the data out of Response Manager into Microsoft Excel/Word. The database is stored on a secure server and backed up regularly.

5.5 REPORT PREPARATION

At the completion of the project, START personnel will review and validate laboratory data and prepare a draft report of field activities and analytical results for EPA OSC review. Draft deliverable documents will be uploaded to the EPA TeamLink website for EPA OSC review and comment.